REMARKS

Claims 1, 2, 6-9 and 11-14 have been rejected by the Examiner under 35 U.S.C. 102(b) as being anticipated by Suzuki et al., U.S. Patent 6,254,218. Claims 3 and 4 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Nicoloff, Jr. et al., U.S. Patent 5,654,744. Claim 5 has been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Uchiyama et al., U.S. Patent 5,798,776. Finally, claim 10 has been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Bloomberg et al., U.S. Patent 6,257,697. These rejections are respectfully traversed.

The present invention is directed to a multi color ink jet printing method and printer, wherein a carriage is moved relative to a recording medium in a main scanning direction and in a subscanning direction orthogonal to the main scanning direction, and each color is printed with a different group of nozzle heads mounted on a carriage, wherein at least one color is printed with a larger number of nozzle heads than the other colors. With the ink jet printer of the present invention, swaths in the main scanning direction are required because the dimensions of the recording head are much smaller than the width of the recording medium. Thus, as can be seen by referring to Figure 1 of the present application, the carriage 10 containing the nozzle heads 16 are much smaller than the width of the recording medium 14 thus necessitating the moving of the carriage back and forth across the recording medium in the main scanning direction, whereby each nozzle head prints a swath on the recording medium during each pass of the carriage. It is believed that the multi color ink jet printing method and ink jet printer as claimed in claims 1, 6 and 14 of the present application are not anticipated by or rendered obvious by the Suzuki et al. patent. Thus, the Suzuki et al. patent does not disclose a multi color ink jet printing method or multi color ink jet printer which utilizes a carriage which moves relative to a recording medium in a main scanning direction and in a subscanning direction orthogonal to the main scanning direction. The Suzuki et al. patent discloses a recording head including 4 ink jet units, each of the 4 ink jet units extending in a range substantially corresponding to the width of the rotation drum in a direction along a rotation center shaft of the rotation drum. Thus, as recited in column 3, lines 12-16 of the reference patent, each of the 4 ink jet units 26C, 26M, 26Y and 26K extends in a range substantially corresponding to a width of the rotation drum 16 in a direction along a rotation center shaft 16d of the rotation drum 16. To form a full-color image on the paper held on the rotation drum, the 4 ink jet units are activated while the rotation drum performs a rotation. The only relative movement during the activation of the ink jet units is in the direction "R", that is, in the direction of rotation of the drum (please see Figure 2 of the Suzuki et al. patent). Since the recording head is substantially as wide as the rotation drum, there is no need to have the recording head traveling relative to the paper sheet in a main scanning direction.

The printing method and ink jet printer of the present invention is inherently different from the printing method disclosed by the Suzuki et al. patent. In the present invention, when the carriage is moved back and forth across the recording medium in the main scanning direction, each head prints a swath on the recording medium during each pass of the carriage. After the printing of a swath, the recording medium is fed in a subscanning direction orthogonal to the main scanning direction. With the ink jet printer of the present invention, swaths in the main scanning direction are required because the dimensions of the recording head are much smaller than the width of the recording medium. Thus, with the ink jet printer of the present invention, to form a full-color image on a paper sheet, it is necessary to have relative movements of the recording head in a main scanning direction and in an subscanning direction orthogonal to the main scanning direction. On the contrary, the Suzuki et al. patent discloses an ink jet printer wherein only a relative movement is required in the direction R, which is the direction of rotation of the rotating drum. In this connection, it should be noted that the two reciprocal movements of the recording head in the direction along the rotation center shaft as discussed in column 4, lines 50-51 of the Suzuki et al. patent, are not comparable to movements in a main scanning direction. The reciprocal movement disclosed by Suzuki et al. is very limited and serves only to enhance the resolution of the printed image. Thus, in the Suzuki et al. patent, when the recording head 26 forms the full-color image on the paper sheet at the 300 dpi pixel density (resolution) while the rotation drum makes 2 rotations, the recording head 26 makes 1 reciprocal movement in the direction along the rotation center shaft 16a by ½ pitch. Thus, the reciprocal movement disclosed by Suzuki et al. is very limited and, as stated above, serves only to enhance the resolution of the printed image. Since the recording head disclosed by the Suzuki et al. patent is as wide as the rotation drum on which the paper is held, movements in a main scanning direction are not required. Accordingly, it is believed that the claims of the present application are not anticipated by or rendered obvious by the Suzuki et al. patent.

Because of the deficiencies in the Suzuki et al. patent, the further reliance upon either the Nicoloff, Jr. et al. patent, the Uchiyama patent and/or the Bloomberg et al. patent cannot possibly suggest the present invention. Thus, irrespective of what these references are relied upon by the Examiner to teach, since none of these references correct the deficiency of the Suzuki et al. patent, as pointed out hereinabove, the further combination of these secondary references with the Suzuki et al. patent cannot possibly suggest the present invention.

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and allowance of all the claims of the present application are respectfully requested.

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